

# Morbidity and Mortality



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WEEKLY REPORT

For Week Ending

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EPIDEMIOLOGIC NOTES AND REPORTS  
LEPTOSPIROSIS - Florida

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In August 1975 the Florida State Division of Health's routine screening of arboviral serology specimens for leptospiral agglutinins yielded 2 presumptive cases of leptospirosis in persons admitted to the same hospital in southeastern Florida. Since discussions with local health authorities suggested that a small common-source outbreak of leptospirosis may have occurred, an investigation was begun.

In late June and early July, 4 residents of Vero Beach and nearby Fellsmere, Florida, developed acute illness characterized by fever and headache (Table 1). On July 4, a 19-year-old woman (patient 1) was admitted to a local hospital with a presumptive diagnosis of meningitis. Cerebrospinal fluid examination revealed a protein of 52 mg%, glucose 54

mg%, 146 red blood cells/mm<sup>3</sup>, and 52 white blood cells/mm<sup>3</sup> with 98% lymphocytes. Routine bacterial cultures were negative. She was treated supportively and was discharged on the eighth hospital day.

On July 11, a 6-year-old boy (patient 2) was admitted to the same hospital with fever, photophobia, and nuchal rigidity.

TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	3rd WEEK ENDING		MEDIAN 1971-1975	CUMULATIVE, FIRST 3 WEEKS		
	January 24, 1976	January 18, 1975		January 24, 1976	January 18, 1975	MEDIAN 1971-1975
Aseptic meningitis	35	43	43	123	114	125
Brucellosis	5	2	2	10	5	5
Chickenpox	4,755	3,899	---	12,579	9,166	---
Diphtheria	5	10	3	30	24	5
Encephalitis	10	11	17	54	31	39
	1	4	4	12	8	8
Hepatitis, Viral	276	214	211	724	564	532
	780	735	1,075	1,969	1,831	2,717
	185	121		497	406	
Malaria	7	3	3	20	10	10
Measles (rubeola)	544	297	564	1,163	613	1,550
Meningococcal infections, total	25	43	37	81	88	88
	24	41	36	80	85	85
Mumps	1	2	1	1	3	4
Pertussis	1,132	1,416	2,087	3,091	3,682	4,891
Rubella (German measles)	28	22	---	92	69	---
Tetanus	228	173	404	500	331	872
Tuberculosis	2	1	---	3	4	2
Tularemia	546	507	---	1,526	1,296	---
Typhoid fever	2	1	4	8	3	8
Typhus, tick-borne (Rky. Mt. spotted fever)	13	2	2	20	7	10
Veneral Diseases:	1	1	1	1	8	5
Gonorrhea	19,337	17,882	---	56,065	49,955	---
	937	465	---	1,913	1,613	---
Syphilis, primary and secondary	500	485	---	1,540	1,417	---
	17	7	---	30	18	---
Rabies in animals	30	46	59	77	100	142

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:*	-	Poliomyelitis, total:	1
Botulism:	3	Paralytic:*	1
Congenital rubella syndrome: Okla. 1	5	Psittacosis:*	5
Leptospirosis: Hawaii 10	13	Rabies in man:	-
Leptospirosis:*	-	Trichinosis:* Ct. 7	16
Plague:	-	Typhus, murine:*	1

\*Delayed Reports: Anthrax: N.J. 1; Leprosy: Guam 1 (1975); Leptospirosis: Texas 1 (1975); Polio, Paralytic: Texas 1 (1975); Psittacosis: Nev. 1; Trichinosis: N.J. 3 (1975) delete 3 (1976); Typhus, Murine: Texas 1 (1975) delete 1 (1976).

## LEPTOSPIROSIS – Continued

Table 1  
Leptospirosis Cases  
Indian River County, Florida – 1975

Patient	Onset	Reciprocal leptospiral MA titers						IHA
		<i>ballum</i>	<i>canicola</i>	<i>autumnalis</i>	<i>pomona</i>	<i>wolfii</i>	<i>cynopteri</i>	
1	6/27	(S <sub>1</sub> ) – (S <sub>2</sub> ) 100	50 1600					
2	7/5	(S <sub>1</sub> ) 100 (S <sub>2</sub> )		100 50	800 1600		200	400 200
3	7/4-5	100	50	200	6400	1600	1600	200
4	7/4-5					400		400

MA—microscopic agglutination test  
IHA—indirect hemagglutination test

Cerebrospinal fluid analysis showed a protein of 120 mg%, glucose 49 mg% (serum glucose 121 mg%), 18 red blood cells/mm<sup>3</sup>, and 1,072 white blood cells/mm<sup>3</sup> with 82% polymorphonuclear leukocytes and 18% lymphocytes. Intravenous ampicillin 400 mg/kg/day was begun but was discontinued on July 13 when admission blood and spinal fluid cultures were reported as negative. The patient improved rapidly and was discharged on the third hospital day.

The 23-year-old mother (patient 3) and 15-year-old male cousin (patient 4) of patient 2 had self-limited febrile illnesses and did not require hospitalization. None of the patients developed rash, myalgias, jaundice, or renal failure.

Investigation revealed that patient 1 had daily contact with 2 raccoons trapped by the woman's father in May 1975. She fed and watered the raccoons and frequently came in contact with objects contaminated by their urine. The only other animal at the home was a dog that had been vaccinated against leptospirosis and had not been ill. The raccoons and the dog were not available for serologic testing at the time of the investigation. No epidemiologic link could be established between the first patient and the other 3 ill persons.

In June patients 2, 3, and 4 worked on a dairy farm where a pasture was frequently flooded after moderate to heavy rainfall. While attending the cattle in the pasture and in the barn, all 3 patients routinely went barefoot. Patients 2 and 4 also swam in a stream that traversed the pasture

and were exposed to numerous domestic animals at the home of patient 4. Although the father of patient 2 also worked on the farm, he always wore boots while working; his serum specimen as well as 1 taken from his 2-year-old daughter was negative for leptospiral agglutinins. Four family members of patient 4, none of whom worked on the farm, were negative for leptospiral agglutinins.

No signs of acute leptospirosis had been observed in the herd, which had been vaccinated against *L. pomona* twice annually. However, an unvaccinated herd is pastured across the road from the dairy farm. After heavy rains, runoff and excreta from this herd flow into the pasture where the dairy cows are located.

(Reported by FJ Vann, MD, and RA Vinson, MD, Vero Beach; CC Flood, MD, Indian River County Health Dept; GR Hoff, PhD and CL Nayfield, MD, State Epidemiologist, Florida Div of Health; Bacterial Immunology Branch, Bacteriology Div, Bur of Laboratories; Field Services Div and Bacterial Zoonoses Branch, Bacterial Diseases Div, Bur of Epidemiology, CDC.)

## Editorial Note

Patients 1 and 2 were brought to the attention of health authorities because serum specimens submitted to the state health department for arboviral serology were screened for leptospiral agglutinins. This screening program was begun because leptospiral infections are often misdiagnosed as arboviral infections. At CDC, serum specimens negative for arboviral antibodies are also screened for leptospiral agglutinins; 8-10% of these have leptospiral microscopic agglutination titers of  $\geq 1:200$ . Aseptic meningitis is probably the most common initial diagnosis in cases of anicteric leptospirosis.

*L. canicola* has been isolated from both dogs and raccoons, but the latter appeared to be the most likely source of patient 1's infection because of her direct contact with raccoon urine.

Although the exact source of the infection for patients 2, 3, and 4 could not be confirmed, cattle represented the most likely reservoir. In patients 2 and 3, the highest agglutination titers were to *L. pomona*, a serotype frequently associated with cattle. Vaccination of domestic animals against leptospirosis may lessen but not eliminate the ability of such animals to serve as reservoir hosts for leptospires. Both immunized dogs and cattle have been implicated in outbreaks of human leptospirosis (1, 2).

## References

1. Feigin RD, Lobes LA, Anderson D, Lickering L: Human leptospirosis from immunized dogs. *Annals Intern Med* 79:777-785, 1973
2. Center for Disease Control: Leptospirosis Annual Summary, 1972, Issued February, 1974

## LEPROSY-LIKE DISEASE IN WILD-CAUGHT ARMADILLOS – Louisiana

Collaborative studies that began in 1969 by the Gulf South Research Institute (GSRI) in New Iberia, Louisiana, and the Public Health Service Hospital in Carville, Louisiana, found that the 9-banded armadillo (*Dasypus novemcinctus*) is susceptible to disseminated infection following inoculation with *Mycobacterium leprae* from human tissue (1). The incubation period was 1-4 years. Because of the unique susceptibility of this animal and the great concentration of bacilli that develop in its tissues, the armadillo rapidly became an important model of leprosy and the source of large numbers of organisms for research purposes.

Further research by GSRI on the histology of uninoculated armadillos has recently determined that 14 9-banded armadillos trapped in southern Louisiana in 1974 and 1975 have infection with acid-fast bacilli similar to *M. leprae* (2).

Invasion of dermal nerves, typical of leprosy, has been confirmed in postmortem examination of 7 animals; examination of tissues from the remaining 7 has not been completed. Attempts to culture the bacilli on 7H10 and Lowenstein-Jensen media have been unsuccessful. Lepromin prepared from the tissues of these wild-caught armadillos gave Mitsuda

(Continued on page 23)

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**TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING JANUARY 24, 1976 AND JANUARY 18, 1975 (3rd WEEK)**

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
	1976	1976	1976	1976	Cum. 1976	Primary: Arthropod-borne and Unspecified		Post Infectious	Type B	Type A	Type Unspecified	1976	Cum. 1976
						1976	1975	1976	1976	1976	1976		
UNITED STATES	35	5	4,755	5	30	10	11	1	276	780	185	7	20
NEW ENGLAND	1	-	337	-	-	1	-	-	11	17	13	1	1
Maine	-	-	10	-	-	-	-	-	-	3	-	-	-
New Hampshire	-	-	7	-	-	-	-	-	-	1	-	-	-
Vermont	-	-	18	-	-	-	-	-	1	-	-	-	-
Massachusetts	1	-	150	-	-	1	-	-	4	9	13	1	1
Rhode Island	-	-	83	-	-	-	-	-	1	-	-	-	-
Connecticut	-	-	69	-	-	-	-	-	5	4	-	-	-
MIDDLE ATLANTIC	2	-	293	-	-	-	1	-	59	77	10	3	6
Upstate New York	-	-	198	-	-	-	-	-	17	47	-	-	1
New York City	2	-	65	-	-	-	-	-	11	11	-	2	4
New Jersey*	-	-	NN	-	-	-	1	-	30	18	9	-	-
Pennsylvania*	-	-	70	-	-	-	-	-	1	1	1	1	1
EAST NORTH CENTRAL	4	-	2,320	-	-	2	1	-	32	100	8	-	-
Ohio	-	-	158	-	-	1	-	-	-	41	-	-	-
Indiana	1	-	191	-	-	-	-	-	1	10	-	-	-
Illinois	-	-	343	-	-	-	-	-	15	6	5	-	-
Michigan	3	-	1,036	-	-	1	1	-	12	37	3	-	-
Wisconsin	-	-	592	-	-	-	-	-	4	6	-	-	-
WEST NORTH CENTRAL	-	-	644	-	-	2	-	-	6	32	19	-	-
Minnesota	-	-	29	-	-	1	-	-	-	-	-	-	-
Iowa	-	-	423	-	-	-	-	-	2	4	-	-	-
Missouri	-	-	78	-	-	1	-	-	3	2	15	-	-
North Dakota	-	-	-	-	-	-	-	-	-	16	-	-	-
South Dakota	-	-	-	-	-	-	-	-	-	-	-	-	-
Nebraska	-	-	69	-	-	-	-	-	-	2	-	-	-
Kansas	-	-	45	-	-	-	-	-	1	8	4	-	-
SOUTH ATLANTIC	4	3	389	-	-	2	1	-	35	82	19	-	4
Delaware	-	-	1	-	-	-	-	-	1	1	-	-	-
Maryland*	1	-	26	-	-	1	1	-	9	9	4	-	-
District of Columbia	-	-	1	-	-	-	-	-	1	-	-	-	1
Virginia*	1	-	9	-	-	-	-	-	3	4	3	-	-
West Virginia	-	-	243	-	-	-	-	-	1	6	-	-	-
North Carolina	1	-	NN	-	-	1	-	-	9	9	2	-	1
South Carolina	-	-	4	-	-	-	-	-	2	6	2	-	-
Georgia	-	-	-	-	-	-	-	-	-	24	-	-	-
Florida	1	3	105	-	-	-	-	-	9	23	8	-	2
EAST SOUTH CENTRAL	1	1	78	-	-	-	-	-	10	52	4	-	-
Kentucky*	-	-	45	-	-	-	-	-	4	22	1	-	-
Tennessee	1	1	NN	-	-	-	-	-	4	21	2	-	-
Alabama	-	-	22	-	-	-	-	-	2	7	1	-	-
Mississippi	-	-	11	-	-	-	-	-	-	2	-	-	-
WEST SOUTH CENTRAL	4	-	345	-	-	-	1	-	22	179	39	-	-
Arkansas	-	-	-	-	-	-	-	-	1	10	2	-	-
Louisiana*	1	-	NN	-	-	-	1	-	8	11	9	-	-
Oklahoma	2	-	80	-	-	-	-	-	9	107	8	-	-
Texas*	1	-	265	-	-	-	-	-	4	51	20	-	-
MOUNTAIN	4	-	54	-	-	-	1	-	6	66	39	-	-
Montana	-	-	-	-	-	-	-	-	-	4	-	-	-
Idaho*	-	-	12	-	-	-	-	-	-	-	-	-	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado	-	-	36	-	-	-	-	-	-	2	2	-	-
New Mexico	-	-	-	-	-	-	1	-	1	11	22	-	-
Arizona	-	-	-	-	-	-	-	-	4	28	3	-	-
Utah	4	-	6	-	-	-	-	-	-	20	12	-	-
Nevada*	-	-	-	-	-	-	-	-	1	1	-	-	-
PACIFIC	15	1	295	5	30	3	6	1	95	175	34	3	9
Washington	-	-	259	5	30	-	2	-	5	14	9	-	1
Oregon	-	-	4	-	-	-	-	-	11	15	8	-	-
California*	11	1	-	-	-	3	4	1	68	146	16	3	8
Alaska	-	-	17	-	-	-	-	-	-	-	-	-	-
Hawaii	4	-	15	-	-	-	-	-	11	-	1	-	-
Guam*	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	2	-	-	-	-	-	-	5	-	1	1
Virgin Islands	1	-	-	-	-	-	-	-	-	-	-	-	-

NN: Not notified. \*Delayed Reports: Aseptic Meningitis: Pa. 3 (1975), Ky delete 3 (1975), Guam 2 (1975); Chickenpox: Me 6, N.H. 53, Va. 146 (1975) 1 (1976), Idaho 32, Calif. 21, Guam 2 (1975); Encephalitis: Pa. 3 (1975), Guam 4 (1975); Hepatitis B: N.H. 2, Pa. 13 (1975), La. delete 1; Hepatitis A: N.H. delete 2, Pa. 37 (1975), Texas delete 2, Idaho 6, Nev. 6; Hepatitis unspecified: Pa. 5 (1975), Guam 5 (1975); Malaria: N.J. 2 (1975), Pa. 2 (1975), Guam 1 (1975)

## Morbidity and Mortality Weekly Report

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING JANUARY 24, 1976 AND JANUARY 18, 1975 (3rd WEEK) — Continued

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1976	Cumulative		1976	Cumulative		1976	Cum. 1976	1976	1976	Cum. 1976	Cum. 1976
		1976	1975		1976	1975						
UNITED STATES	543	1,162	613	25	81	88	1,132	3,091	28	228	500	3
NEW ENGLAND	-	3	2	1	7	7	31	169	2	8	9	-
Maine	-	-	-	-	-	-	-	12	-	-	-	-
New Hampshire	-	-	1	-	-	1	1	6	-	-	-	-
Vermont	-	-	-	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	-	3	2	5	25	-	3	3	-
Rhode Island	-	2	-	1	1	1	14	89	-	3	3	-
Connecticut	-	1	1	-	3	3	11	37	2	2	3	-
MIDDLE ATLANTIC	70	120	51	4	9	6	92	211	3	78	173	-
Upstate New York	39	65	19	2	4	2	11	32	2	2	7	-
New York City	8	10	6	1	3	-	36	89	1	7	11	-
New Jersey	2	8	23	1	1	2	27	49	-	66	152	-
Pennsylvania*	21	37	3	-	1	2	18	41	-	3	3	-
EAST NORTH CENTRAL	118	324	259	2	6	13	549	1,275	13	58	154	-
Ohio*	1	2	5	-	1	5	54	196	-	5	19	-
Indiana	11	65	13	-	-	-	33	180	-	8	19	-
Illinois	4	11	70	-	-	1	34	156	-	6	35	-
Michigan	21	33	71	2	5	6	284	406	2	28	51	-
Wisconsin	81	213	100	-	-	1	144	337	11	11	30	-
WEST NORTH CENTRAL	9	25	112	2	6	5	150	325	2	8	18	-
Minnesota	1	1	-	-	2	1	59	93	1	1	3	-
Iowa	-	2	-	-	-	1	36	96	-	1	1	-
Missouri*	-	-	5	1	1	3	40	57	-	4	7	-
North Dakota	-	1	3	-	-	-	-	12	-	-	-	-
South Dakota	-	-	33	-	-	-	-	-	-	-	-	-
Nebraska	4	16	57	-	-	-	-	19	1	-	1	-
Kansas	4	5	14	1	3	-	15	48	-	2	6	-
SOUTH ATLANTIC	96	172	15	5	17	16	75	254	3	39	47	1
Delaware	3	3	-	-	-	-	-	3	-	-	-	-
Maryland*	57	57	-	-	1	1	26	94	-	-	-	-
District of Columbia	-	-	-	-	-	-	8	10	-	-	-	-
Virginia	1	1	-	-	-	3	11	22	-	-	1	-
West Virginia	3	28	12	-	-	-	15	86	-	24	31	-
North Carolina	-	-	-	3	5	2	-	1	1	2	2	-
South Carolina	-	1	-	-	1	3	-	4	-	7	7	-
Georgia	-	-	-	-	-	3	-	-	-	-	-	-
Florida	32	82	3	2	10	4	15	34	2	6	6	1
EAST SOUTH CENTRAL	13	66	15	3	6	22	56	161	2	7	13	1
Kentucky	13	66	10	-	1	9	8	31	-	3	4	1
Tennessee	-	-	3	1	3	7	37	95	2	4	9	-
Alabama	-	-	-	2	2	3	10	32	-	-	-	-
Mississippi	-	-	2	-	-	3	1	3	-	-	-	-
WEST SOUTH CENTRAL	106	115	9	3	10	13	49	199	-	4	32	1
Arkansas	-	1	-	-	-	-	-	-	-	-	-	-
Louisiana	1	1	-	-	1	2	-	-	-	-	20	1
Oklahoma	104	107	1	-	2	2	2	38	-	3	4	-
Texas*	1	6	8	3	7	9	47	161	-	1	8	-
MOUNTAIN	104	272	56	1	4	1	14	195	-	2	7	-
Montana	-	-	-	1	1	-	-	2	-	1	1	-
Idaho*	10	34	2	-	-	-	7	105	-	-	1	-
Wyoming	-	-	-	-	-	-	-	-	-	-	-	-
Colorado	2	2	54	-	-	-	3	6	-	-	-	-
New Mexico	-	-	-	-	-	-	4	58	-	-	2	-
Arizona	-	-	-	-	2	1	-	-	-	-	-	-
Utah	92	236	-	-	1	-	-	23	-	1	3	-
Nevada	-	-	-	-	-	-	-	1	-	-	-	-
PACIFIC	27	65	94	4	16	5	116	302	3	24	47	-
Washington*	2	2	3	1	4	1	43	114	1	12	12	-
Oregon	-	-	4	-	1	-	13	38	-	2	4	-
California	25	61	87	3	11	4	59	149	2	10	28	-
Alaska	-	-	-	-	-	-	-	-	-	-	-	-
Hawaii	-	2	-	-	-	-	1	1	-	-	3	-
Guam*	-	-	-	-	-	-	-	-	-	-	-	-
Puerto Rico	2	5	-	-	1	-	7	34	1	-	-	-
Virgin Islands	-	-	1	-	-	-	-	11	-	-	-	-

\*Delayed Reports: Measles: Ohio delete 1 (1975), Mo. delete 1 (1975), Texas 3, Wash. delete 1 (1975), Guam 1 (1975); Meningococcal Infection: Pa. 1 (1975), Texas 1; Mumps: Me. 1, N.C. 3, Idaho 5, Guam 1 (1975); Pertussis: Mo. delete 1; Rubella: Texas delete 1; Tetanus: Texas 1 (1975)

# Morbidity and Mortality Weekly Report

**TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDING JANUARY 24, 1976 AND JANUARY 18, 1975 (3rd WEEK) - Continued**

AREA	TUBERCULOSIS		TULA-REMLIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
	1976	Cum. 1976	Cum. 1976	1976	Cum. 1976	1976	Cum. 1976	GONORRHEA			SYPHILIS (Pri. & Sec.)			
								1976	Cumulative		1976	Cumulative		
									1976	1975		1976	1975	
<b>UNITED STATES</b>	<b>546</b>	<b>1,526</b>	<b>8</b>	<b>13</b>	<b>20</b>	<b>1</b>	<b>1</b>	<b>19,337</b>	<b>56,065</b>	<b>49,955</b>	<b>509</b>	<b>1,549</b>	<b>1,417</b>	<b>77</b>
<b>NEW ENGLAND</b>	<b>36</b>	<b>71</b>	-	-	-	-	-	<b>617</b>	<b>1,775</b>	<b>1,526</b>	<b>11</b>	<b>38</b>	<b>41</b>	<b>3</b>
Maine	4	6	-	-	-	-	-	47	139	131	-	-	1	3
New Hampshire*	3	3	-	-	-	-	-	10	32	48	-	-	1	-
Vermont*	-	-	-	-	-	-	-	15	38	21	-	1	2	-
Massachusetts	21	41	-	-	-	-	-	341	834	656	9	23	26	-
Rhode Island	2	4	-	-	-	-	-	26	121	137	-	2	1	-
Connecticut*	6	17	-	-	-	-	-	178	611	533	2	12	10	-
<b>MIDDLE ATLANTIC</b>	<b>77</b>	<b>191</b>	-	<b>3</b>	<b>6</b>	-	-	<b>1,808</b>	<b>5,210</b>	<b>5,523</b>	<b>80</b>	<b>274</b>	<b>304</b>	-
Upstate New York	7	21	-	-	1	-	-	304	635	1,329	7	10	26	-
New York City	28	71	-	3	5	-	-	945	2,520	2,358	51	199	188	-
New Jersey	24	53	-	-	-	-	-	114	680	656	9	35	39	-
Pennsylvania	18	46	-	-	-	-	-	445	1,375	1,180	13	30	51	-
<b>EAST NORTH CENTRAL</b>	<b>53</b>	<b>153</b>	-	-	<b>1</b>	-	-	<b>2,963</b>	<b>8,900</b>	<b>7,688</b>	<b>23</b>	<b>138</b>	<b>120</b>	<b>2</b>
Ohio*	12	59	-	-	1	-	-	674	2,441	2,180	4	27	26	-
Indiana	14	37	-	-	-	-	-	194	480	792	2	5	11	-
Illinois	7	11	-	-	-	-	-	1,422	3,367	2,474	13	81	58	-
Michigan	20	38	-	-	-	-	-	415	1,859	1,548	1	17	18	-
Wisconsin	-	8	-	-	-	-	-	258	753	694	3	8	7	2
<b>WEST NORTH CENTRAL</b>	<b>12</b>	<b>45</b>	<b>3</b>	<b>1</b>	<b>1</b>	-	-	<b>985</b>	<b>3,075</b>	<b>2,302</b>	<b>39</b>	<b>66</b>	<b>46</b>	<b>17</b>
Minnesota	-	9	1	1	1	-	-	234	670	587	4	10	6	6
Iowa	-	2	-	-	-	-	-	146	453	60	26	29	-	5
Missouri*	7	24	1	-	-	-	-	363	1,134	974	7	22	27	2
North Dakota	1	2	-	-	-	-	-	8	48	47	-	-	1	1
South Dakota	-	-	-	-	-	-	-	27	98	114	-	-	-	-
Nebraska	-	-	-	-	-	-	-	105	243	154	2	3	2	-
Kansas	4	8	1	-	-	-	-	102	429	366	-	2	10	3
<b>SOUTH ATLANTIC</b>	<b>143</b>	<b>363</b>	-	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4,501</b>	<b>13,204</b>	<b>12,956</b>	<b>157</b>	<b>457</b>	<b>397</b>	<b>15</b>
Delaware	1	3	-	-	-	-	-	114	247	143	-	7	7	-
Maryland	26	46	-	-	-	-	-	496	1,849	1,199	12	38	37	-
District of Columbia	8	18	-	-	-	-	-	238	823	950	14	36	42	-
Virginia	47	115	-	-	-	-	-	574	1,632	1,406	11	48	45	2
West Virginia	9	13	-	-	-	-	-	56	181	139	1	1	-	-
North Carolina*	19	59	-	-	-	1	1	840	1,888	2,044	36	73	44	-
South Carolina	-	8	-	-	-	-	-	597	1,239	1,264	11	27	32	1
Georgia	16	42	-	1	1	-	-	619	2,288	2,328	21	52	59	11
Florida	17	59	-	-	-	-	-	967	3,057	3,483	51	175	131	1
<b>EAST SOUTH CENTRAL</b>	<b>43</b>	<b>150</b>	<b>3</b>	<b>1</b>	<b>1</b>	-	-	<b>1,897</b>	<b>5,065</b>	<b>3,611</b>	<b>13</b>	<b>53</b>	<b>42</b>	<b>5</b>
Kentucky	8	27	1	1	1	-	-	287	783	564	1	5	4	4
Tennessee	18	52	2	-	-	-	-	717	1,954	1,610	8	25	17	-
Alabama	9	45	-	-	-	-	-	570	1,289	651	1	12	16	1
Mississippi	8	26	-	-	-	-	-	323	1,039	786	3	11	5	-
<b>WEST SOUTH CENTRAL</b>	<b>78</b>	<b>178</b>	-	-	-	-	-	<b>2,630</b>	<b>8,405</b>	<b>6,904</b>	<b>64</b>	<b>193</b>	<b>156</b>	<b>17</b>
Arkansas	5	49	-	-	-	-	-	192	552	336	1	1	3	4
Louisiana*	27	45	-	-	-	-	-	295	1,314	1,266	16	45	55	-
Oklahoma	9	18	-	-	-	-	-	264	845	526	2	9	11	5
Texas*	37	66	-	-	-	-	-	1,879	5,694	4,776	45	138	87	8
<b>MOUNTAIN</b>	<b>19</b>	<b>38</b>	-	-	<b>1</b>	-	-	<b>771</b>	<b>2,214</b>	<b>2,014</b>	<b>6</b>	<b>25</b>	<b>34</b>	<b>7</b>
Montana	-	-	-	-	-	-	-	24	95	152	-	-	-	6
Idaho	-	-	-	-	-	-	-	42	103	114	-	-	-	-
Wyoming	2	2	-	-	-	-	-	15	48	31	-	-	-	-
Colorado	3	7	-	-	-	-	-	237	546	526	-	12	9	-
New Mexico	2	6	-	-	-	-	-	183	561	360	-	4	7	-
Arizona	12	22	-	-	1	-	-	205	594	574	6	8	17	1
Utah*	-	-	-	-	-	-	-	47	167	68	-	-	-	-
Nevada*	-	1	-	-	-	-	-	18	100	189	-	1	1	-
<b>PACIFIC</b>	<b>85</b>	<b>337</b>	<b>2</b>	<b>7</b>	<b>9</b>	-	-	<b>3,165</b>	<b>8,217</b>	<b>7,431</b>	<b>116</b>	<b>305</b>	<b>277</b>	<b>11</b>
Washington	8	38	-	1	1	-	-	275	750	626	-	-	17	-
Oregon	4	6	-	-	-	-	-	209	633	667	3	11	6	-
California	58	244	2	6	8	-	-	2,497	6,357	5,784	112	290	250	9
Alaska	-	-	-	-	-	-	-	141	280	192	-	-	-	2
Hawaii	15	49	-	-	-	-	-	43	197	162	1	4	4	-
Guam*	-	-	-	-	-	-	-	-	-	29	-	-	-	-
Puerto Rico	10	18	-	-	-	-	-	68	143	-	9	13	-	1
Virgin Islands	-	-	-	-	-	-	-	9	22	7	5	12	3	-

\*Delayed Reports: TB: Ohio delete 3 (1975); Mo. delete 2 (1975), N.C. delete 3 (1975), Utah 2 (1975); Typhoid fever: N.H. 1; R.M.S.F.: Mo. delete 1 (1975); Gonorrhoea: Vt. 1 (1975), La. delete 5 (1975), Texas delete 2,000 (1975), 2000 (1976), Nev. 44, Guam 16 (1975); Syphilis: Nev. 1, Guam 2 (1975); Animal Rabies: Conn. delete 1 (1975)

Week No.  
3

TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING JANUARY 24, 1976

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes					Pneumonia and Influenza All Ages	Area	All Causes					Pneumonia and Influenza All Ages
	All Ages	65 years and over	45-64 years	25-44 years	Under 1 year			All Ages	65 years and over	45-64 years	25-44 years	Under 1 year	
<b>NEW ENGLAND</b>	779	489	211	33	22	37	<b>SOUTH ATLANTIC</b>	1,243	717	360	831	44	68
Boston, Mass.	265	153	78	15	7	16	Atlanta, Ga.	139	65	42	15	11	8
Bridgeport, Conn.	37	27	6	1	2	1	Baltimore, Md.	237	133	75	15	6	3
Cambridge, Mass.	14	10	3	-	-	2	Charlotte, N. C.	63	36	20	5	2	3
Fall River, Mass.	39	26	11	-	-	1	Jacksonville, Fla.	89	49	21	10	5	2
Hartford, Conn.	41	17	17	5	2	1	Miami, Fla.	96	51	30	8	3	6
Lowell, Mass.	33	24	9	-	-	3	Norfolk, Va.	68	41	16	5	4	10
Lynn, Mass.	18	12	6	-	-	2	Richmond, Va.	81	48	27	4	1	9
New Bedford, Mass.	31	24	7	-	-	-	Savannah, Ga.	66	40	21	2	1	7
New Haven, Conn.	55	33	12	5	2	-	St. Petersburg, Fla.	84	70	10	-	4	3
Providence, R. I.	79	50	20	1	5	5	Tampa, Fla.	69	45	17	2	-	8
Somerville, Mass.	12	10	2	-	-	2	Washington, D. C.	220	124	67	16	7	9
Springfield, Mass.	44	26	11	2	3	2	Wilmington, Del.	31	15	14	1	-	-
Waterbury, Conn.	39	24	12	2	1	1							
Worcester, Mass.	72	53	17	2	-	1							
							<b>EAST SOUTH CENTRAL</b>	802	459	234	40	32	39
<b>MIDDLE ATLANTIC</b>	3,171	2,002	830	181	72	119	Birmingham, Ala.	155	92	42	7	9	7
Albany, N. Y.	53	37	13	2	1	-	Chattanooga, Tenn.	61	42	14	3	1	7
Allentown, Pa.	34	27	6	1	-	1	Knoxville, Tenn.	57	40	12	1	1	2
Buffalo, N. Y.	135	86	36	8	3	12	Louisville, Ky.	94	49	30	7	4	6
Camden, N. J.	40	25	10	3	1	3	Memphis, Tenn.	200	116	50	12	10	3
Elizabeth, N. J.	33	12	16	3	-	-	Mobile, Ala.	72	28	33	5	-	1
Erie, Pa.	32	21	6	1	1	3	Montgomery, Ala.	49	34	12	2	1	8
Jersey City, N. J.	59	50	5	-	3	-	Nashville, Tenn.	114	58	41	3	6	5
Newark, N. J.	74	39	21	5	4	3							
New York City, N. Y.	1,507	954	393	96	22	53	<b>WEST SOUTH CENTRAL</b>	1,407	805	374	103	51	47
Paterson, N. J.	38	25	9	1	3	4	Austin, Tex.	54	32	14	3	2	4
Philadelphia, Pa.	592	349	174	36	18	6	Baton Rouge, La.	62	39	14	3	3	3
Pittsburgh, Pa.	195	117	52	13	6	20	Corpus Christi, Tex.	56	33	12	5	3	2
Reading, Pa.	45	35	8	1	1	1	Dallas, Tex.	170	92	50	11	8	3
Rochester, N. Y.	98	70	23	2	1	5	El Paso, Tex.	49	29	12	4	-	7
Schenectady, N. Y.	22	18	2	1	1	-	Fort Worth, Tex.	96	56	24	10	2	2
Scranton, Pa.	25	15	9	1	-	1	Houston, Tex.	369	181	124	36	6	9
Syracuse, N. Y.	94	64	18	4	3	2	Little Rock, Ark.	73	44	19	4	1	6
Trenton, N. J.	59	32	22	1	4	3	New Orleans, La.	141	82	35	8	11	-
Utica, N. Y.	14	11	3	-	-	-	San Antonio, Tex.	155	95	33	11	6	2
Yonkers, N. Y.	22	15	4	2	-	2	Shreveport, La.	73	48	13	2	6	2
							Tulsa, Okla.	109	74	24	6	3	7
<b>EAST NORTH CENTRAL</b>	2,373	1,428	627	135	96	67	<b>MOUNTAIN</b>	507	302	134	30	22	29
Akron, Ohio	60	39	12	1	5	-	Albuquerque, N. Mex.	35	23	4	3	2	4
Canton, Ohio	30	22	5	3	-	2	Colorado Springs, Colo.	29	17	8	1	3	1
Chicago, Ill.	609	347	175	45	23	16	Denver, Colo.	130	77	32	11	5	5
Cincinnati, Ohio	143	80	42	8	8	2	Las Vegas, Nev.	34	18	13	2	-	3
Cleveland, Ohio	191	110	50	9	7	1	Ogden, Utah	17	11	4	1	1	1
Columbus, Ohio	134	82	33	5	6	1	Phoenix, Ariz.	124	71	38	7	5	2
Dayton, Ohio	87	54	25	4	2	3	Pueblo, Colo.	23	19	3	-	-	10
Detroit, Mich.	304	183	86	16	6	1	Salt Lake City, Utah	48	25	15	1	5	2
Evansville, Ind.	44	32	10	1	1	2	Tucson, Ariz.	67	41	17	4	1	1
Fort Wayne, Ind.	47	27	14	5	1	4							
Gary, Ind.	25	13	8	2	2	2	<b>PACIFIC</b>	1,888	1,173	484	108	56	38
Grand Rapids, Mich.	63	40	14	3	3	5	Berkeley, Calif.	23	16	5	-	2	-
Indianapolis, Ind.	138	80	36	11	8	2	Fresno, Calif.	71	46	19	3	-	-
Madison, Wis.	36	18	9	-	7	3	Glendale, Calif.	42	34	7	1	-	1
Milwaukee, Wis.	139	94	32	6	2	3	Honolulu, Hawaii	81	54	16	4	3	7
Peoria, Ill.	71	49	14	2	6	3	Long Beach, Calif.	125	77	33	7	4	4
Rockford, Ill.	54	41	8	2	-	11	Los Angeles, Calif.	600	351	164	45	20	10
South Bend, Ind.	48	31	11	2	2	1	Oakland, Calif.	77	52	19	1	3	1
Toledo, Ohio	85	56	18	5	4	4	Pasadena, Calif.	36	23	9	2	2	1
Youngstown, Ohio	65	30	25	5	3	1	Portland, Oreg.	154	99	36	8	7	-
							Sacramento, Calif.	61	37	15	3	3	1
<b>WEST NORTH CENTRAL</b>	779	497	201	33	31	37	San Diego, Calif.	146	97	32	6	3	1
Des Moines, Iowa	48	31	16	1	-	2	San Francisco, Calif.	179	105	47	15	7	4
Duluth, Minn.	21	12	6	2	-	2	San Jose, Calif.	36	22	10	-	-	-
Kansas City, Kans.	32	20	7	2	1	1	Seattle, Wash.	165	101	48	8	2	3
Kansas City, Mo.	121	82	23	9	5	7	Spokane, Wash.	57	39	12	2	-	2
Lincoln, Neb.	31	25	5	-	-	3	Tacoma, Wash.	35	20	12	3	-	3
Minneapolis, Minn.	94	64	22	3	3	1							
Omaha, Neb.	87	50	27	3	4	1							
St. Louis, Mo.	236	139	71	11	11	10	<b>Total</b>	12,949	7,872	3,455	746	426	481
St. Paul, Minn.	52	39	9	-	3	2	<b>Expected Number</b>	12,973	7,963	3,367	794	406	509
Wichita, Kans.	57	35	15	2	4	8							

+Delayed report for week ending January 17, 1976.

**LEPROSY-LIKE DISEASE — Continued**

reactions at 28 days in lepromatous and tuberculoid leprosy patients that were identical to those induced by lepromin prepared from human lepromatous tissue. The behavior of the organism has been identical to *M. leprae* by immunofluorescent staining and by pyridine extractability of acid-fastness.

The 14 naturally infected armadillos were trapped at 4 locations 17 to 39 miles from the GSRI laboratories and represent approximately 10% of uninoculated animals that were examined from these trapping areas. Two of the 14 had been in captivity for more than 5 months before examination, but most were examined within 1 month of capture. Four of the 14 had ulcers or subcutaneous nodules suggestive of leprosy noted prior to death. One animal had acid-fast bacilli on nasal smear.

The 9-banded armadillo, the only armadillo species indigenous to the U.S., apparently first migrated into Louisiana in the 1930s from Texas. It is now widely distributed in all Gulf Coast states and Oklahoma.

(Reported by GP Walsh, PhD, and EE Storrs, PhD, Gulf South Research Institute, New Iberia, La; CH Binford, MD, Armed Forces Institute of Pathology, Washington, DC; CT Caraway, DVM, State Epidemiologist, Louisiana Health & Human Resources Admin; Leprosy and Rickettsia Branch, Virology Div, Bur of Laboratories, Special Pathogens Branch and Bacterial Zoonoses Branch, Bacterial Diseases Div, Bur of Epidemiology, CDC.)

**Editorial Note**

The pathologic picture and the Mitsuda reactions at 28 days strongly suggest that the mycobacteria found in these wild armadillos are *M. leprae*, but until other pending confirmatory tests are available, the identification cannot be considered definite.

Leprosy has been endemic in Louisiana for more than a century. Since 9-banded armadillos have been in Louisiana only since the 1930s, and the incidence of leprosy has been decreasing in that state for the past 50 years, it is unlikely that the armadillo has been a significant source of the reported leprosy cases there. A retrospective epidemiologic study was recently completed with 19 of the 23 leprosy patients who have been reported from Louisiana since 1966 and who do not have a family history of leprosy. The reported armadillo contact of these patients was low and similar to that of matched controls, suggesting that armadillo contact has not been related to leprosy in humans.

**References**

1. Kirchheimer WF, Storrs EE: Attempts to establish the armadillo (*Dasypus novemcinctus* Linn.) as a model for the study of leprosy. I. Report of Lepromatoid leprosy in an experimentally infected armadillo. *Int J Lepr* 39:693-702, 1971
2. Walsh GP, Storrs, EE, Burchfield HP, Cottrell EH, Vidrine MF, Binford CH: Leprosy-like disease occurring naturally in armadillos. *J Reticuloendothel Soc* 18:347-351, 1975

**FOLLOW-UP ON AN INTERSTATE OUTBREAK OF TYPHOID**

*Salmonella typhi* has been isolated from specimens from 5 more persons who ate dinner at a New York City restaurant, Patricia Murphy's Candlelight Restaurant at 12 East 49th Street, on December 13, 1975; this brings the total number of culture-proven cases to 12 (*MMWR* 25[2]). Typhoid is also suspected in a woman who was treated with ampicillin before the diagnosis of typhoid was considered; she has had splenomegaly, rose spots, and rising antibody titers. All 6 of the most recent cases were reported from Massachusetts.

All of the current employees of the restaurant have had

at least 1 negative purged-stool culture; additional stool specimens are being obtained. Investigators are searching for 7 former restaurant employees who have not yet submitted specimens for culture. The vehicle of transmission and a carrier have not yet been identified.

(Reported by NJ Fiumara, MD, State Epidemiologist, Massachusetts Dept of Public Health; E Bell, RN, JS Marr, MD, New York City Epidemiologist, Bur of Infectious Disease Control, New York City; Field Services Div, Enteric Diseases Branch, Bacterial Diseases Div, Bur of Epidemiology, CDC.)

**CURRENT TRENDS  
INFLUENZA — Worldwide****South Africa**

An outbreak of influenza A occurred between December 10, 1975, and January 6, 1976, in a mining population in Transvaal. Fourteen strains were isolated. Sporadic cases have been reported in Johannesburg.

**United Kingdom**

Sporadic cases of influenza A and B have been occurring since December. Forty-two influenza B strains similar to B/Hong Kong/5/72 have been isolated. Fourteen of the A strains are identical to each other and are distinct from A/Port Chalmers and A/Scotland. One strain similar to A/Victoria/3/75 has been isolated.

(Reported by the World Health Organization in the Weekly Epidemiological Record 51[3]:19, January 16, 1976.)

**United States**

**Arizona and Washington:** Influenza virus has been isolated in Arizona and confirmed as A/Victoria/3/75-like. In-

fluenza A virus also has been isolated in Washington; antigenic typing is pending.

**Iowa:** Three strains of influenza A virus have been isolated from 16 students with respiratory illnesses at the University of Iowa. The students had been ill during the week ending January 23. The same week an outbreak of influenza-like illness occurred in Lansing, Iowa.

**Minnesota:** An outbreak of a typical influenza-like illness occurred in the week ending January 16 in an elementary school in St. Paul; 107 of 300 students were affected. Influenza A virus was isolated from all of the 7 students who were cultured.

An earlier isolate (*MMWR* 25[2]) has been confirmed as A/Victoria/3/75-like.

**New Jersey and Massachusetts:** Influenza A virus has been isolated in these states from localized outbreaks. Further characterization of viruses is pending.

**New York:** During the week ending January 23, an

outbreak of respiratory illness occurred in the Riker's Island Prison in New York City; 74 of 1,600 inmates were admitted to the infirmary. Influenza virus has been isolated.

(Reported by HG Feldick, MD, Student Health Service, University of Iowa; WJ Hausler, Jr, PhD, YW Wong, Iowa State Hygienic Laboratory; JM Counts, PhD, Acting State Epidemiologist, Arizona Dept of Health Services; CA Herron, MD, State Epidemiologist, Iowa Dept of Health; NJ Fiumara,

MD, State Epidemiologist, R Gilfillan, PhD, Massachusetts Dept of Public Health; BS Levy, MD, Acting State Epidemiologist, Minnesota Dept of Health; R Altman, MD, State Epidemiologist, New Jersey Dept of Health; B Starrett, MD, JS Marr, MD, New York City Epidemiologist, Bur of Infectious Disease Control; AC Fleck, MD, State Epidemiologist, New York Dept of Health; Virology Div, Bur of Laboratories, and Viral Diseases Div, Bur of Epidemiology, CDC.)

#### INTERNATIONAL NOTES QUARANTINE MEASURES

The following changes should be made in the Supplement - "Health Information for International Travel," MMWR, Vol. 24, December 1975:

##### BELGIUM

**Smallpox** - Delete all information. Insert code II.

##### CANADA

**Smallpox** - Delete note. Insert: A Certificate is ALSO required from travelers who within the preceding 14 days have been in or transited a country any part of which is infected.

##### CANARY ISLANDS

**Smallpox** - Delete all information. Insert code II. Insert: A Certificate is ALSO required from travelers who within the preceding 14 days have been in a country any part of which is infected.

##### CHAD

**Cholera** - Insert: Chad recommends vaccination for travelers arriving from an infected area.

##### CHRISTMAS ISLAND

**Cholera** - Delete note.

**Smallpox** - Insert: Except that NO Certificate is required from travelers who have been resident in the following countries for 14 days before arriving in Christmas Island:

Americas: USA, Canada.

Oceania: American Samoa, Antarctica, Australia, Cocos (Keeling) and Cook Islands, Fiji, French Polynesia, Gilbert and Ellice Islands (including Ocean and Fanning Islands), Hawaii, Lord Howe Island, Nauru, New Caledonia, New Guinea, New Hebrides, New Zealand, Niue and Norfolk Islands, Papua, Solomon and Tokelau Islands, Tonga, Western Samoa

However, a Certificate will be required from travelers arriving from any smallpox infected area.

##### CUBA

**Yellow Fever** - Insert: Africa: Afars and the Issas, Cape Verde Islands, Equatorial Africa, Ivory Coast.

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The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials.

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